

ABSTRACT

An optical network terminator for terminating and reducing the accumulated noise in an optical network networks, particularly ring based networks. Use of the present invention The terminator eliminates the prior art problems of noise accumulation from ASE amplifier spontaneous emission (ASE), thermal noise, etc., while providing bi-directional communications in the optical network. The optical network may have any topology such as including ring, star, mesh, point-topoint, etc. In the case of an optical ring, the ring is broken and an optical terminator is placed in line The optical network terminator includes a filter such as an optical therewith. demultiplexer/multiplexer or Fiber Bragg Grating (FBG) based filter. The filter functions to each Each individual wavelength of light is filtered and generate a multi-wavelength optical output with is generated whereby the noise accumulation is removed. Each channel is adapted to only pass a bandlimited signal around the center frequency corresponding to the wavelengths supported by the particular optical ring network. Equalization of the channels is enabled using Channel equalization uses variable optical attenuators and monitors in line with each channel. Channels currently not in use ean may be disconnected from the ring remotely by setting the corresponding optical attenuator to a low enough level.

